

Subpart E—Safeguards for Mechanical Equipment

§ 77.400 Mechanical equipment guards.

(a) Gears; sprockets; chains; drive, head, tail, and takeup pulleys; flywheels; couplings; shafts; sawblades; fan inlets; and similar exposed moving machine parts which may be contacted by persons, and which may cause injury to persons shall be guarded.

(b) Overhead belts shall be guarded if the whipping action from a broken line would be hazardous to persons below.

(c) Guards at conveyor-drive, conveyor-head, and conveyor-tail pulleys shall extend a distance sufficient to prevent a person from reaching behind the guard and becoming caught between the belt and the pulley.

(d) Except when testing the machinery, guards shall be securely in place while machinery is being operated.

§ 77.401 Stationary grinding machines; protective devices.

(a) Stationary grinding machines other than special bit grinders shall be equipped with:

(1) Peripheral hoods (less than 90° throat openings) capable of withstanding the force of a bursting wheel.

(2) Adjustable tool rests set as close as practical to the wheel.

(3) Safety washers.

(b) Grinding wheels shall be operated within the specifications of the manufacturer of the wheel.

(c) Face shields or goggles, in good condition, shall be worn when operating a grinding wheel.

§ 77.402 Hand-held power tools; safety devices.

Hand-held power tools shall be equipped with controls requiring constant hand or finger pressure to operate the tools or shall be equipped with friction or other equivalent safety devices.

§ 77.403 Mobile equipment; falling object protective structures (FOPS).

(a) When necessary to protect the operator of the equipment, all rubber-tired or crawler-mounted self-propelled scrapers, front-end loaders, dozers, graders, loaders, and tractors, with or without attachments, that are used in

surface coal mines or the surface work areas of underground coal mines shall be provided with substantial falling object protective structures (FOPS). FOPS which meet the requirements of the Society of Automotive Engineers (SAE) Standard J 231 shall be considered to be a "substantial" FOPS. An authorized representative of the Secretary may approve a FOPS which provides protection equivalent to SAE J 231.

(b) When necessary to protect the operator of the equipment, forklift or powered industrial trucks shall be provided with substantial FOPS. Such FOPS shall meet the requirements of the State of California, Division of Industrial Safety, General Safety Orders, Register 72, Number 6, February 8, 1972, Article 25, Section 3655—"Overhead Guards for High-Lift Rider Trucks."

(Sec. 101(a), Federal Coal Mine Health and Safety Act of 1969, as amended (83 Stat. 745; 30 U.S.C. 811(a))

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§ 77.403-1 Mobile equipment; rollover protective structures (ROPS).

(a) All rubber-tired or crawler-mounted self-propelled scrapers, front-end loaders, dozers, graders, loaders, and tractors, with or without attachments, that are used in surface coal mines or the surface work areas of underground coal mines shall be provided with rollover protective structures (hereinafter referred to as ROPS) in accordance with the requirements of paragraphs (b) through (f) of this section, as applicable.

(b) *Mobile equipment manufactured on and after September 1, 1974.* All mobile equipment described in paragraph (a) of this section manufactured on and after September 1, 1974 shall be equipped with ROPS meeting the requirements of the Department of Labor specified in §§ 1926.1001 and 1926.1002 of Part 1926, Title 29, Code of Federal Regulations—Safety and Health Regulations for Construction.

(c) *Mobile equipment manufactured prior to September 1, 1974.* All mobile equipment described in paragraph (a) of this section manufactured prior to September 1, 1974 shall be equipped with ROPS meeting the requirements of paragraphs (d) through (f) of this